BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of	)	
	)	
Review of the Commission's Rules	)	WT Docket No. 17-200
Governing the 896-901/935-940 MHz	)	
Band	)	

To: The Commission

REPLY COMMENTS OF LOWER COLORADO RIVER AUTHORITY

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Summary

While the comments reflect varying degrees of support for, or opposition to, realignment of the 900 MHz band, there is overwhelming support by all commenters for the need to protect large, complex incumbent utility 900 MHz narrowband systems from the disruption and potential harmful interference that would be caused by a mandatory relocation. No commenter objected to the Commission's proposal to exclude "complex systems" with 65 or more integrated sites from relocation. The parties that initially petitioned the Commission to create a broadband option in the 900 MHz band support such an exclusion. Moreover, several commenters agreed with LCRA that the Commission should revise the threshold to 25 sites and consider other factors for defining a complex system. Thus, there is strong support in the record for excluding complex systems from any mandatory relocation and to adopt a definition of complex systems consistent with that proposed by LCRA.

A carve-out for complex systems is the best way to minimize harmful interference to narrowband incumbents, protect mission-critical public-safety communications, and mitigate any disruptions that a reconfiguration of the 900 MHz band may cause. Based on the record created in this proceeding, the Commission should consider LCRA's system to be a complex system carved-out from any mandatory relocation, as well as any other system that (i) has 25 or more integrated 900 MHz sites; (ii) is shared with public safety or other eligible entities; or (iii) is authorized for an extended implementation period.

The record confirms that the Commission should adopt certain licensing and technical rules to ensure that narrowband systems are protected under any realignment process. The Commission should limit eligibility for the newly designated narrowband segments to B/ILT entities to ensure there is sufficient spectrum to accommodate relocated narrowband incumbents

and prevent warehousing of the narrowband segment by commercial entities. The Commission should provide utilities with priority access to 900 MHz narrowband channels during relocation. The Commission should adopt protection levels similar to those afforded to 800 MHz band systems of -104 dBm for mobiles and -101 dBm for portables. The Commission should not mandate narrowband incumbents to transition from 12.5 kHz to 6.25 kHz bandwidth.

Finally, LCRA supports the recommendations by commenters to ensure that narrowband systems are protected against harmful interference from adjacent broadband operations. The Commission should ensure that broadband licensees bear sole responsibility for remediating any interference under specific and enforceable time periods and standards, require cooperation by broadband licensees in resolving interference, and provide authority for the Commission to impose restrictions on a broadband licensee's operations if the broadband licensee cannot resolve the interference.

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Lower Colorado River Authority ("LCRA") hereby submits its reply comments regarding the above-referenced proceeding.[1]

The Federal Communications Commission ("FCC" or "Commission") has asserted that its "goal is to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation, ***while continuing to accommodate narrowband incumbents.***"[2] FCC Chairman Ajit Pai has stated that:

> [W]e must minimize any harmful interference that new operations in this band would cause to incumbents like the Lower Colorado River Authority. Mission-critical public-safety communications must be protected. Our staff at the FCC are hard at work to mitigate any disruptions that a reconfiguration of this band may cause, and I am confident that we can move forward in a manner that protects incumbents while maximizing the use of the spectrum for the American public.[3]

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[1] *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Notice of Proposed Rulemaking, WT Docket No. 17-200, FCC 19-19 (rel. March 14, 2019) ("*900 MHz NPRM*"). *See* 84 Fed. Reg. 14641.

[2] *900 MHz NPRM* at ¶ 11 (emphasis added); *See also 900 MHz NPRM* at ¶ 70 ("Our goal in establishing technical rules for broadband operations is to develop flexible rules that enable a wide variety of services, while providing sufficient protection to licensees in adjacent narrowband spectrum, as well as to licensees in the broadband segment in adjacent areas.").

[3] Letter from Chairman Ajit V. Pai, Federal Communications Commission to the Honorable John Cornyn, United States Senate (May 24, 2019); Letter from Chairman Ajit V. Pai, Federal

The Commission should only proceed with rebanding if it would accomplish its goal of continuing to accommodate narrowband incumbents and can be done in a manner that is consistent with Chairman Ajit Pai's commitments. LCRA respectfully submits that the best way for the Commission to achieve this goal is to adopt a carve-out for "complex" narrowband systems such as the LCRA system, as supported by numerous parties in the record, and to allow exceptions to mandatory relocation in appropriate circumstances. LCRA also submits that the Commission should adopt its proposal to rely on a voluntary, market-driven relocation process and adopt certain licensing and technical rules to ensure that incumbents are protected under any realignment process.

I. The Record Confirms That Complex Systems, Such as the One Operated by LCRA, Will Not Fit Within a 2/2 MHz Narrowband Segment and Should be Carved-Out from Any Mandatory Relocation

LCRA explained in its comments that its existing narrowband system would not fit within a 2/2 MHz narrowband allocation and would suffer harmful interference if forced to relocate to the compressed narrowband segments.[4] As described below, many commenters agreed that complex incumbent systems, such as the one operated by LCRA, would experience harmful interference and significant disruption if forced to relocate to the compressed narrowband segments. As the Commission evaluates whether to proceed with realignment of the 900 MHz band and the appropriate mechanism for doing so, the Commission should give significant weight to the concerns of incumbent 900 MHz licensees with large narrowband systems that would be most directly affected and would bear the greatest burden of relocation.

Communications Commission to the Honorable Ted Cruz, United States Senate (May 24, 2019); Letter from Chairman Ajit V. Pai, Federal Communications Commission to the Honorable Michael McCaul, U.S. House of Representatives (May 24, 2019).

[4] Comments of LCRA at 3-10, WT Docket No. 17-200 (filed June 3, 2019).

The Commission should acknowledge that entities that do not currently operate in the 900 MHz band would potentially obtain the benefits of increased access to spectrum, but would not suffer any negative impacts to their existing operations.

LCRA recommended that in the event the Commission proceeds with realignment of the 900 MHz band to create a broadband allocation, the Commission should exclude "complex" narrowband systems from any mandatory relocation and should not issue a broadband license in any county where a complex system is present without the voluntary agreement by such complex narrowband incumbent.[5] While LCRA does not generally support realignment of the 900 MHz band because of the impact it will have on its incumbent complex system, LCRA also indicated that "a carve-out from mandatory relocation for complex narrowband systems, if defined properly, combined with the requirement for the prospective broadband provider to obtain express consent before obtaining a license to deploy broadband operations, could alleviate the majority of its concerns regarding the impact of a 900 MHz rebanding on its narrowband operation."[6]

Therefore, LCRA supported the Commission's proposal to exclude incumbent licensees with complex systems from mandatory relocation.[7] However, contrary to the proposed definition in the *900 MHz NPRM*, LCRA recommended that the Commission adopt a definition of "complex" systems that includes (1) any system with 25 or more integrated 900 MHz sites; (2) any system that is shared by the B/ILT licensee with public safety users or other eligible entities

[5] *Id.* at 10-14.

[6] *Id*. at 10.

[7] *900 MHz NPRM* at ¶ 38.

pursuant to Section 90.179; or (3) any system that is authorized for an extended implementation period pursuant to Section 90.629.[8]

It is important to note that no commenter objected to the Commission's proposal to exclude complex systems with 65 or more integrated sites from relocation. Moreover, several commenters agreed with LCRA that the Commission should revise the threshold to 25 sites and consider other factors for defining a complex system.

Significantly, pdvWireless, Inc. ("PDV"), which submitted the petition to realign the 900 MHz band, also supports the Commission's proposal to exempt complex systems with 65 or more integrated sites from any mandatory relocation trigger. PDV explained that it supports the Commission's proposal because there "are a limited number of 900 MHz systems that meet this definition, and all are licensed to entities providing critical infrastructure services."[9] PDV further stated that it "agrees that networks of that size will require particularly detailed relocation plans" and will need a "special, more deliberate path" before allowing an entity to provide broadband services.[10] The Enterprise Wireless Alliance ("EWA"), which joined with PDV to propose realignment of the 900 MHz band, stated that it "does not object to the proposal in the NPRM to exempt from any mandatory negotiation process the small number of systems classified by the FCC as particularly complex."[11]

LCRA and other commenters explained that the proposed threshold of 65 sites is too high because it does not adequately consider that systems with fewer sites can be particularly complex

[8] Comments of LCRA at 10-11.

[9] Comments of pdvWireless, Inc. ("PDV") at 17, WT Docket No. 17-200 (filed May 30, 2019).

[10] *Id*. at 17-18.

[11] Comments of the Enterprise Wireless Alliance ("EWA") at 7, n. 9, WT Docket No. 17-200 (filed June 3, 2019).

to design, install, and operate. In particular, LCRA discussed that it shares its 900 MHz system on a non-profit basis with other utility generation, transmission and distribution companies, and public safety entities, such as police, fire, EMS, emergency management, school districts, transit authorities, and flood management and warning systems.[12] LCRA further described that its 900 MHz narrowband system "is used to monitor river and stream flood stage levels and provide life-saving warnings to the public, as well as to control community-based emergency based sirens and dispatch paging for fire-fighting units and EMS."[13] LCRA also noted that the Commission has granted LCRA an extended implementation period to construct its 900 MHz system based on the purpose, size, and complexity of LCRA's system and because LCRA's system is part of a coordinated or integrated, wide-area system.[14] For each of these reasons, LCRA reiterates that the Commission should consider LCRA's system to be a complex system carved-out from any mandatory relocation, as well as any other system that (i) has 25 or more integrated 900 MHz sites; (ii) is shared with public safety or other eligible entities; or (iii) is authorized for an extended implementation period.

The Utilities Technology Council ("UTC") stated that "the Commission should revise this exception to clarify that it applies to systems with 25 or more sites. In addition, the exemption should also factor in the nature of the use of these systems."[15] UTC noted, for example, that "utilities use these 900 MHz systems to support public safety communications as well as communications with nuclear power stations" and asserted that the Commission "would

[12] Comments of LCRA at 11.

[13] *Id*. at 11.

[14] *Id*. at 12-13.

[15] Comments of Utilities Technology Council ("UTC") at 21, WT Docket No. 17-200 (filed June 3, 2019).

not want such systems to be subject to mandatory relocation."[16] UTC explained that 65 sites is "an unreasonably high threshold for the number of sites needed to meet the definition of a complex system."[17] UTC also indicated that adopting a threshold of 25 sites "would be more consistent with commonly understood industry practices and terminology regarding 'complex systems.'"[18] For these reasons, UTC proposed a definition of complex systems as:

> A system that has a central means of controlling the entire system through a network allowing operability across all sites. The system is comprised of more than 25 sites, may span large geographic areas while bridging together non-contiguous areas, and may have large channel capacity on a site by site basis.
>
> A complex system can also involve direct public communications involving high risk with direct ties to public well-being. For example, a siren/public notification system supporting nuclear or a water monitoring and control systems integrated as part of a private land mobile radio system.[19]

The Critical Infrastructure Coalition ("CIC")[20], which includes LCRA, City of Los Angeles, Department of Water and Power ("LADWP"), Harris Corporation, NextEra Energy, Inc. ("NextEra"), and South Carolina Public Service Authority ("Santee Cooper") agreed that "certain systems should be completely excluded from any consideration of mandatory relocation."[21] The CIC explained that the "the proposed 65-site threshold for excluding a system from mandatory relocation is much too high, however, and incumbents should be permitted to

[16] *Id.* at 21.

[17] *Id*.

[18] *Id.* at 21-22.

[19] *Id.* at 22.

[20] The CIC is an ad hoc group participating in this specific proceeding and is not affiliated with any group with the same or similar names participating in other FCC proceedings.

[21] Comments of Critical Infrastructure Coalition ("CIC") at 8, WT Docket No. 17-200 (filed June 3, 2019).

count all sites used in their interoperable networks, regardless of geography."[22] The CIC noted that "900 MHz licensees have deployed networks to provide highly resilient, critical communications over very congested spectrum" and that such systems "certainly are complex even if they do not satisfy the arbitrary 65-site threshold set forth in the NPRM."[23] The CIC therefore recommended that, "at a minimum, any threshold for determining a complex system should include all the sites and channels used by a licensee across interoperable networks, regardless of geographic continuity; and the number of sites to be considered eligible as a complex system licensee should be no more than 25."[24]

NextEra stated that it "agrees certain markets that are extensively used by narrowband incumbents for critical communications should not be subject to the uncertainty of potential reconfiguration and relocation. The number of sites to trigger the exclusion, however, should be reduced to 25."[25] NextEra added that its 900 MHz narrowband system should be considered complex, in part, because it is used to support critical communications and siren public alert systems for two nuclear power plants.[26] NextEra asserted that "[o]nce designated as complex, the exclusion should remain in place indefinitely."[27] NextEra further stated that "[d]ue to the large investments made and potential public impact, complex systems should only be relocated if

[22] *Id*. at 8.

[23] *Id.*

[24] *Id*. at 9.

[25] Comments of NextEra Energy, Inc. ("NextEra") at 21, WT Docket No. 17-200 (filed June 3, 2019).

[26] *Id.*

[27] *Id.* at 22.

the affected licensees voluntarily choose to do so."[28] Similarly, LCRA recommended that complex systems should be permanently excluded from any mandatory relocation obligation.[29]

NextEra recommended that the Commission adopt the following definition of a complex system:

> a) a system ultimately controlled by a single entity that has a central means of controlling the entire system that is integrated together through a network that allows for operability across all sites. The system is comprised of 25 or more sites, may span large geographic regions, including across county or State lines, while bridging together non-contiguous areas, and may have large channel capacity on a site by site basis.
>
> b) an aggregation of systems authorized to separate licensees that together are comprised of 25 sites or more in the same market, may span large geographic regions while bridging together non-contiguous areas, and may have large channel capacity on a site by site basis.
>
> c) a system that involves direct communications to the public for high risk alerts with direct ties to public wellbeing. A siren/public notification system that operates in a radius of 10 miles of a nuclear power plant is an example of this.[30]

These comments endorse LCRA's position that if the Commission proceeds with realignment of the 900 MHz band, a carve-out for complex systems is the best way to minimize harmful interference to narrowband incumbents, protect mission-critical public-safety communications, and mitigate any disruptions that a reconfiguration of this band may cause. As discussed above, no commenters opposed the Commission's proposal to adopt a carve-out for complex systems, the main proponents of realignment explicitly supported it or stated that they do not object, and several commenters recommended definitions for complex systems that are similar to LCRA's proposed definition. Thus, there is strong support in the record for adopting

[28] *Id*.

[29] Comments of LCRA at 13.

[30] Comments of NextEra at 21.

the Commission's proposal to exclude complex systems from any mandatory relocation and to adopt a definition consistent with that proposed by LCRA.

The Commission has acknowledged that "any transition mechanism the Commission adopts for the 900 MHz band must account for such variations in the intensity of spectrum use across geographic areas and provide for alternatives where necessary."[31] LCRA discussed that the 900 MHz band is heavily encumbered in the areas of Texas within LCRA's service territory.[32] Other commenters agreed that there is extensive use of the 900 MHz narrowband channels in Texas. For example, Oncor Electric Delivery Company ("Oncor") noted that "the Commission observes that there may be some areas where 900 MHz narrowband channels are not being used. That is not the case in rural Texas, where Oncor's network covers its entire service area."[33] Oncor also stated that prospective broadband providers are "primarily interested in serving major cities, such as Dallas/Ft. Worth, where narrowband frequencies are already heavily used by Oncor and other operators."[34] The National Association of Manufacturing ("NAM") and MRFAC, Inc. ("MRFAC") (collectively, "NAM/MRFAC") discussed that an analysis of the available 900 MHz B/ILT channels demonstrates that "[s]pectrum scarcity also exists in many smaller markets as well, such as … Austin, among others."[35]

These comments confirm that incumbents, such as LCRA, have made extensive use of the 900 MHz narrowband channels in Texas and that such incumbent systems would not fit

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[31] *900 MHz NPRM* at ¶ 24.

[32] Comments of LCRA at 18.

[33] Comments of Oncor Electric Delivery Company ("Oncor") at 13, WT Docket No. 17-200 (filed June 3, 2019).

[34] *Id*.

[35] Comments of the National Association Manufacturers ("NAM") and MRFAC, Inc. ("MRFAC") (collectively, "NAM/MRFAC") at 3, WT Docket No. 17-200 (filed June 3, 2019).

within a 2/2 MHz narrowband allocation. A carve-out for complex systems in areas that are heavily encumbered would be consistent with the pledge by the Commission to take into account the intensity of spectrum use across geographic areas and provide alternatives where necessary.

II. The FCC Should Not Impose a Mandatory Relocation and Should Only Implement a Voluntary, Market-Driven Relocation

Numerous commenters echoed LCRA's concerns that many incumbent utility and other critical infrastructure industry ("CII") 900 MHz systems would experience significant harm and disruption if the Commission mandates realignment of the 900 MHz band.

NextEra commented that "a reconfiguration to mandate broadband operations in the 900 MHz band would result in increased interference and expenses and thwart NextEra's future expansion and optimization of critical narrowband operations in its markets."[36] NextEra further discussed the spectrum engineering reports that it previously submitted in this proceeding – one by the Harris Corporation and one by Gillespie, Prudhon & Associates, Inc. – that demonstrated the realignment proposal would not provide its subsidiary, Florida Power & Light company ("FP&L"), with enough narrowband spectrum to replicate its existing operations and would lead to increased interference to its 900 MHz narrowband system.[37]

Duke Energy Corporation ("Duke Energy") expressed it is "concerned with the way the NPRM is proposing to reallocate the 896-901/935-940 MHz spectrum due to the major disruption to Duke Energy's existing PLMR systems currently using this band."[38] Duke Energy explained that the proposed realignment of the 900 MHz band "would be very disruptive to Duke

[36] Comments of NextEra at 9.

[37] *Id.* at 9-10.

[38] Comments of Duke Energy Corporation ("Duke Energy") at 6, WT Docket No. 17-200 (filed June 3, 2019).

Energy's business operations and likely would significantly affect its ability to deliver energy to its customers in a safe and efficient manner."[39]

Similar to the comments submitted by LCRA, Duke Energy stated that the proposed realignment "will cause significant disruption to the existing incumbent users, such as Duke Energy, and will subject incumbents to higher levels of interference as their existing channels are crowded into the proposed 1.5 and .5 MHz narrowband segments."[40] Duke Energy noted that it has 173 discrete 900 MHz narrowband channels and that it "is very much concerned with the overcrowding that will naturally occur as a result of realigning the 900 MHz band as Duke Energy and other current incumbents are required to relocate their channels out of the 3/3 MHz broadband segment."[41] Duke Energy went on to say that "[a]s the proposed changes will condense the number and spacing of the narrowband channels into the 1.5 and .5 MHz segments blocks, the ability of the incumbent narrowband license holders to space their required channels in both the frequency and geographic distance necessary to provide adequate and mandated interference protection in some highly congested regions may well prove to be impossible."[42]

FirstEnergy Corp. ("FirstEnergy") expressed "severe reservations that this proposed operation will have a lasting harmful impact on the critical LMR system" used by its subsidiary "to provide reliable electric power and especially to support emergency restoration services."[43] FirstEnergy explained that the proposed realignment of the 900 MHz band and the lack of a

[39] *Id*. at 6.

[40] *Id*. at 3.

[41] *Id.* at 8.

[42] *Id.* at 8.

[43] Comments of FirstEnergy Corp. ("FirstEnergy") at 1, WT Docket No. 17-200 (filed June 3, 2019).

guard band between the narrowband and broadband operations will cause interference to its system similar to the interference that was experienced by public safety 800 MHz systems.[44]

LADWP discussed that its 900 MHz system supports emergency operations for its water and power activities, including dispatch and safety operations such as inspecting and maintaining high-voltage transmission lines, investigating the integrity of dams, measuring water levels, and other important functions.[45] LADWP voiced concern that "[a]ny realignment of the band risks significant disruption to the important functions discussed above."[46] LADWP elaborated that the disruptions to its operations could include "actual interference (due to the NPRM's proposal to provide no separation between the broadband and narrowband channels), or coverage reduction due to realignment in some but not all counties, ...".[47]

The American Petroleum Institute ("API") and the Energy Telecommunications and Electrical Association ("ENTELEC") explained that the reallocation "may be disruptive and potentially detrimental to incumbent narrowband facilities, require careful planning and reasonable accommodation."[48] API/ENTELEC highlighted that incumbent large narrowband systems would be especially affected by the proposed realignment and therefore asserted that the Commission "must minimize the impact to incumbent large CII facilities subject to relocation of narrowband radio systems and ensure full cost reimbursement."[49] API/ENTELEC argued that it

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[44] *Id*. at 3-4.

[45] Comments of the City of Los Angeles Department of Water and Power ("LADWP") at 2-3, WT Docket No. 17-200 (filed June 3, 2019).

[46] *Id*. at 3.

[47] *Id.*

[48] Joint Comments of the American Petroleum Corporation ("API") and the Energy Telecommunications and Electrical Association ("ENTELEC") at 2, WT Docket No. 17-200 (filed June 3, 2019).

[49] *Id.* at 3.

is imperative the Commission recognize the concerns raised by CII entities regarding the potential impacts to their systems "by not forcing large incumbent systems to relocate where the licensee deems doing so unfeasible."[50]

Many commenters agreed with these concerns and vigorously opposed any form of mandatory relocation for narrowband incumbents. UTC stated that "it is concerned by the Commission's suggestion in the NPRM that a broadband applicant should be permitted to invoke mandatory relocation under circumstances where it holds a certain percentage of the spectrum in a county but where there are incumbents that have not agreed to relocate from the remaining amount of spectrum."[51] UTC opposed mandatory relocation because (i) it would be speculative to assume that incumbents that decide not to voluntarily relocate will present a significant problem; (ii) the Commission's suggested mandatory relocation process assumes the broadband applicant has engaged in good faith negotiations and offered reasonable terms for relocation; and (iii) the proposal for mandatory relocation lacks sufficient safeguards to prevent broadband applicants from subverting voluntary negotiations.[52]

The CIC asserted that if the Commission proceeds with realignment, it "must be completed using a market-driven, voluntary approach."[53] The CIC opposed "any mandatory relocation mechanism that would both interfere with the free market and potentially jeopardize critical infrastructure communications."[54] The CIC argued that "licensees should not be forced

[50] *Id.*

[51] Comments of UTC at 20.

[52] *Id.* at 20-21.

[53] Comments of CIC at 6.

[54] *Id.*

to relocate into new spectrum or deploy new systems that may be less resilient or more costly to operate . . . ."[55]

NextEra stated that the Commission "should not mandate a reconfiguration of the 900 MHz band to create a broadband segment because that would adversely affect critical narrowband operations in certain markets, such as FPL's. The participants in each market should make a truly voluntary decision based on their individualized circumstances."[56] NextEra supported the Commission's proposal to only issue a broadband license in a county where the applicant has reached an agreement to voluntarily relocate, or has demonstrated how it will provide interference protection to, all covered incumbents with two caveats – (1) the required demonstration of interference protection must be to the satisfaction of the affected incumbent 900 MHz licensee; and (2) the licensed contours in adjacent, non-transitioning counties must be properly accounted for and protected.[57] LCRA fully supports these conditions and urges the Commission to incorporate them into the voluntary relocation process.[58]

Oncor similarly stated that "it is concerned about proposals that would begin as a voluntary process and subsequently convert to mandatory relocation after a certain period of

[55] *Id*. at 7.

[56] Comments of NextEra at 7.

[57] *Id*. at 17.

[58] *See* Letter from Kevin M. Cookler, Counsel to LCRA to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 17-200, at 2 (filed March 6, 2019) ("*LCRA March 6, 2019 Ex Parte Letter*") ("LCRA urges the Commission to clarify that either scenario – whether relocation or protection of covered incumbents – must be voluntary through agreement between the covered incumbents and the broadband licensee."); Comments of LCRA at 17 ("Therefore, LCRA urges the Commission to make clear that the prospective broadband licensee must protect site-based narrowband licensees operating in adjacent counties that have not transitioned to the new band plan with sites that are within 70 miles of the county border.").

time."[59] Oncor explained that "[s]uch a process would be voluntary in name only in that all narrowband licensees would be compelled to accept potentially unfavorable negotiated agreements early in the process rather than hold out for an equitable relocation agreement and thereby risk being forced into the mandatory process."[60]

FirstEnergy, based on its concerns discussed above regarding the impact that realignment would have on mission critical incumbent utility systems, stated that it "strongly believes voluntary relocation is the only acceptable method of relocating incumbents."[61] FirstEnergy advocated that in cases where large incumbent LMR system operators "do not believe that applications available through the 900 MHz broadband network are beneficial, they should not be forced to undergo mandatory relocation."[62] Alliant Energy Corporate Services, Inc. ("Alliant Energy") also stated that it "supports the Commission's voluntary exchange process proposal, rather than any mandatory process."[63] API/ENTELEC expressed that an "incumbent's relocation and re-banding costs should be negotiated using a voluntary, market-based approach with the broadband licensee, not on a mandatory basis."[64]

Several other non-utility commenters also supported a voluntary, market-driven relocation process and opposed any mandatory relocation. NAM/MRFAC explained that "there are many narrowband incumbents across the country and too few channels to assume a broadband allocation can be easily accommodated without risk of material harm to

[59] Comments of Oncor at 5.

[60] *Id.* at 6.

[61] Comments of FirstEnergy at 9.

[62] *Id*.

[63] Comments of Alliant Energy Corporate Services, Inc. ("Alliant Energy") at 2, WT Docket No. 17-200 (filed June 3, 2019).

[64] Joint Comments of API/ENTELEC at 3.

incumbents."[65] NAM/MRFAC asserted that "there is simply not enough spectrum in many markets to ensure that an incumbent forced to relocate would not suffer significant operational disruption, rather than receive spectrum that would allow it to maintain comparable facilities."[66] Motorola Solutions, Inc. ("Motorola Solutions") stated that it "fully supports the Commission's proposed market-driven approach where 900 MHz site-based incumbents have the opportunity to relocate on a 100% voluntary basis and are not mandated to relocate."[67] Motorola Solutions agreed that "[i]ncumbents should not be mandated to relocate nor expected to incur any relocation costs."[68] The United Parcel Service, Inc. ("UPS") also agreed that "a voluntary process would be the fastest and most efficient approach, but it must be conducted with maximum flexibility for the parties."[69]

LCRA agrees with these commenters. If the Commission proceeds with realignment, LCRA supports the Commission's proposal to complete relocation using a voluntary, market-driven approach. The comments discussed above make clear that there is strong support in the record for relying on purely voluntary mechanisms for realigning the 900 MHz band. The Commission seeks comment on whether to transition from a voluntary to a mandatory relocation process in those markets where a prospective broadband licensee meets certain thresholds for voluntary exchanges with narrowband incumbents.[70] For example, the Commission suggests

[65] NAM/MRFAC Comments at 3.

[66] *Id.* at 5.

[67] Comments of Motorola Solutions, Inc. ("Motorola Solutions") at 4, WT Docket No. 17-200 (filed June 3, 2019).

[68] *Id*. at 4.

[69] Comments of United Parcel Service, Inc. ("UPS") at 12, WT Docket No. 17-200 (filed June 3, 2019).

[70] *900 MHz NPRM* at ¶ 38.

that it could require mandatory relocation for incumbents, except those with complex systems, if the prospective broadband licensee reaches agreement with or demonstrates protection to incumbents that control a certain percentage of the 900 MHz channels. If the Commission decides that it is necessary to convert to a mandatory relocation process where a prospective broadband licensee meets the proposed thresholds, the Commission should adopt its proposal to exclude complex systems and adopt the definition for complex systems proposed by LCRA, as supported by numerous parties in the record, and allow exceptions to mandatory relocation in appropriate circumstances

Some commenters have suggested that a mandatory relocation mechanism is necessary as a backstop to address incumbent narrowband licensees that might decide not to voluntarily relocate their operations. The Commission should firmly reject any such implication that incumbent narrowband licensees that do not wish to relocate are an impediment to the Commission accomplishing its goals in this proceeding, particularly in light of the multiple reasons that may justify an incumbent's inability to relocate and the likelihood that sufficient spectrum can be cleared to facilitate a broadband network in the band.

PDV speculates that some incumbents might "not engage in the negotiation process at all" or request compensation that PDV deems to be "entirely disproportionate to the cost of realignment or any reasonable reflection of the value of its spectrum holdings."[71] PDV further hypothesizes that some incumbents would refuse to negotiate or not engage in good faith negotiations because they "are corporations of such size and economic heft that voluntary negotiations to relocate a handful of 900 MHz frequencies are unlikely to ever reach the top of

[71] Comments of PDV at 14.

their business/legal teams' to-do-lists."[72] In other instances, PDV claims that incumbents would not be motivated to engage in good faith negotiations because they are governmental entities or non-profit organizations that are not motivated by economic compensation.[73]

These comments do not accurately reflect the operational and technical requirements of 900 MHz narrowband systems operated by utility systems for mission-critical communications, such as the LCRA system. LCRA and many other utility and CII entities explained in their comments that they rely on their 900 MHz narrowband systems to provide reliable voice and data communications that are essential for ensuring the safe, reliable and secure delivery of energy and water services.

Commenters agree that incumbent narrowband systems must be protected against harmful interference, must be able to expand their systems to meet future needs, and must be provided with comparable facilities and full reimbursement for their relocation costs. LCRA and other commenters have demonstrated that their systems are complex and would not fit within a 2/2 MHz narrowband allocation. Incumbent narrowband licensees have expressed valid concerns regarding interference that a broadband licensee would cause to their narrowband systems and with the costs they would incur to relocate their systems. Incumbent narrowband licensees have also raised strong concerns about having to rely on a third-party provider for broadband services in the 900 MHz band.[74]

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[72] *Id.*

[73] *Id.*

[74] *See e.g.*, Comments of Southern California Edison at 3-4, WT Docket No. 17-200 at (filed June 3, 2019) ("Utilities must have the ability to own and control their own licensed spectrum without being dependent on third party providers") and at 9 (discussing that leasing spectrum from PDV or an existing broadband common carrier will not work); Comments of Duke Energy at 14 ("Duke Energy encourages the Commission to limit eligibility of prospective broadband

Thus, the record confirms that realignment in certain markets may not be in the public interest because introducing new broadband operations in the 900 MHz band in those markets would not accommodate the narrowband incumbents. Incumbent 900 MHz narrowband licensees that elect, after careful consideration and analysis, not to relocate their narrowband operations to the compressed 2/2 MHz segments because of these valid concerns are not "hold outs" seeking disproportionate compensation or acting in bad faith. These incumbents would be making a rational decision not to relocate based on their particular circumstances, and the Commission should ensure that such incumbents should not be forced to relocate upon making such a showing

For PDV to suggest, before any voluntary relocation process has even been approved by the Commission, that incumbents would ignore the Commission's rules and not engage in good faith negotiations, or for PDV to already be questioning the costs that incumbents would incur to relocate, reinforces LCRA's concerns that the Commission would need to appoint a neutral, third-party transition administrator to oversee any relocation mechanism.

PDV also suggests that a purely voluntary relocation process is unfair because it would allow a hypothetical licensee that holds a single license for a single 12.5 kHz frequency at a single site to thwart the Commission's determination that a broadband option in the 900 MHz band would serve the public interest.[75] The Commission should not adopt relocation rules based on hypothetical scenarios that don't exist or are extremely unlikely. PDV's comments do not accurately reflect how incumbents design and operate their narrowband systems. PDV has not described any actual incumbents that only hold one license for one frequency at a single site. In

license holders in the 3/3 MHz broadband spectrum and the services derived from it to the current PLMR incumbents.").

[75] Comments of PDV at 14.

fact, as described by LCRA and other commenters, utility narrowband systems can be extremely complex to design and can require numerous sites using up to hundreds of channels across wide geographic areas.

Moreover, commenters asserting that incumbents that decide not to voluntarily relocate would be jeopardizing the purpose of this proceeding or interfering with the deployment of broadband mischaracterize the Commission's *900 MHz NPRM*. As discussed at the beginning of these reply comments, the Commission made clear that its "goal is to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation, ***while continuing to accommodate narrowband incumbents.***"[76] The Commission acknowledged that many commenters' support for realigning the 900 MHz band is contingent on preserving the ability of incumbents to operate and expand 900 MHz operations, prevent interference to such operations from broadband systems, and minimize the cost and disruption of band realignment.[77] The Commission proposed a voluntary, market-driven relocation mechanism and explicitly sought comment on excluding complex systems from any mandatory relocation. Thus, the Commission has not determined that introducing a broadband option in the 900 MHz band in every single market is necessarily in the public interest. Instead, the Commission has proposed to let the free market decide whether there is sufficient interest in a broadband option. Incumbent narrowband licensees that elect not to relocate their operations to the new narrowband segments would not be thwarting the Commission's efforts or preventing the Commission from accomplishing its goals in this proceeding. Rather, they would be acting entirely consistent with the Commission's goal of ensuring that the 900 MHz band continues to accommodate

[76] *900 MHz NPRM* at ¶ 11 (emphasis added).

[77] *Id.* at ¶ 5.

narrowband systems and letting the free market decide if there is enough interest in a 900 MHz broadband option.

PDV also suggests that a realignment of the 900 MHz band is necessary because of the need for private broadband networks. PDV comments that industry needs private broadband networks "built to their elevated standards of reliability, resiliency, and security; systems that meet their cost justification standards; systems to which they have immediate, non-preemptible access at all times, but particularly in emergency situations; systems they and only they control."[78] PDV elaborates that entities providing critical infrastructure services need broadband "built to their demanding specifications for reliability, resiliency, and security that often exceed those needed to satisfy consumer requirements."[79] However, the Commission's proposal would not provide utilities with private broadband networks that they own, control, and operate. Moreover, there is nothing in the *900 MHz NPRM* or the proposed rules that would require the broadband licensee to meet a utility's standards of reliability, resiliency, or security, or that would provide utilities and CII entities with non-preemptible access at all times or even in emergency situations.

It is also important to note that while PDV attempts to associate the proposed realignment of the 900 MHz band with the Commission's 5G FAST Plan,[80] allocating a 3/3 MHz segment in the 900 MHz band is certainly not high-speed broadband and would not directly facilitate the deployment of 5G services. LCRA and other commenters discussed that the Commission has acknowledged that a "3/3 megahertz broadband link would have relatively limited capacity and

[78] Comments of PDV at ii.

[79] *Id.* at 4.

[80] *Id.* at 1-2.

speed compared to existing nationwide and regional 4G networks and, by itself, might not be able to serve direct-to-consumer demand in densely populated areas."[81] Any suggestion that realignment of the 900 MHz band would support the deployment of 5G networks is a faulty premise.

III. The Commission Should Adopt Licensing and Technical Rules That Protect Narrowband Incumbents

In the event the Commission proceeds with realignment, LCRA reiterates its support for certain licensing and technical rules to ensure that narrowband systems are protected.

As LCRA proposed, the Commission should limit eligibility for the newly designated narrowband segments to B/ILT entities.[82] UTC also urged the Commission to "limit eligibility exclusively to B/ILT entities to access licenses in the narrowband segment of the 900 MHz band."[83] API/ENTELEC stated that they "do not support allowing SMR eligible to license B/ILT channels."[84] API/ENTELEC explained that allowing SMRs to obtain a 3/3 MHz broadband license and to license B/ILT channels will result in narrowband spectrum scarcity for CII facilities.[85] LCRA agrees with API/ENTELEC and with UTC that reserving the narrowband channels for B/ILT would "help to ensure sufficient spectrum is made available for relocation of B/ILT licensees, who are likely to be the ones that are principally affected by the transition of the 900 MHz band."[86] LCRA submits that there is support for limiting eligibility to 900 MHz narrowband channels exclusively to B/ILT entities to ensure that there is sufficient spectrum to

[81] *900 MHz NPRM* at ¶ 12.

[82] Comments of LCRA at 22-23.

[83] Comments of UTC at 11.

[84] Joint Comments of API/ENTELEC at 5.

[85] *Id*. at 5.

[86] Comments of UTC at 12.

relocate narrowband incumbents and to prevent warehousing of the narrowband segment by SMRs. LCRA also supports UTC's proposal that the Commission provide utilities and CII entities with priority access to 900 MHz narrowband channels during relocation.[87]

The record supports LCRA's recommendation that the Commission adopt protection levels similar to those afforded to 800 MHz band systems of -104 dBm for mobiles and -101 dBm for portables.[88] UTC, which supported using the same interference criteria in the 900 MHz band as the Commission has used in the 800 MHz, explained that "applying the interference criteria from the 800 MHz band here would be more appropriate because it more closely aligns with the interference environment and the configuration of the band that the Commission proposes through realignment of the 900 MHz band."[89] The CIC and NextEra asserted that the Commission "should ensure that incumbents are adequately protected from interference by adopting the same interference criteria that it developed for the 800 MHz band after it was segmented into separate narrowband and broadband parts of the band. Specifically, the Commission should align the 900 MHz B/ILT interference standard with the standard used for the 800 MHz band."[90] Duke Energy also proposed that the Commission "adopt as applicable to the 900 MHz band those interference limits in 47 C.F.R. § 90.672 currently applicable to 800 MHz licensees. Specifically, Duke Energy urges the Commission to apply to the 900 MHz band a harmful interference definition of those unwanted or undesired signal or signals which occur to

[87] *Id.* at 10-11.

[88] Comments of LCRA at 5.

[89] Comments of UTC at 27.

[90] Comments of CIC at 7; Comments of NextEra at 18.

a victim receiver when that victim receiver is receiving a desired signal level of -104 dBm or higher and -101 dBm or higher for mobile and portable transceivers respectively."[91]

Commenters also agreed with LCRA that the Commission should not mandate that incumbents transition to 6.25 kHz bandwidth. PDV acknowledged that doing so "would have a significant impact on the technical and operational parameters of covered incumbent systems, affecting all their frequencies, not just those in the broadband segment."[92] Therefore, PDV does not support such a requirement to transition to 6.25 kHz bandwidth. Other commenters, including the CIC, NextEra, and API/ENTELEC also opposed any such requirement and urged the Commission to maintain the existing 12.5 kHz bandwidth requirement.[93]

LCRA also supports the following recommendations by various commenters to ensure that narrowband systems are protected against harmful interference from adjacent broadband operations. First, LCRA supports Alliant Energy's recommendation that the Commission clarify the interference protection rules to "ensure that the broadband licensee bears sole responsibility for fully remediating any interference, including making whole those incumbents whose critical operations are impacted" and that Commission establish "specific and enforceable time periods and standards for remediation to which the offending broadband licensee can quickly and publicly be held accountable."[94]

LCRA agrees with Sensus USA, Inc. ("Sensus") that "the FCC should ensure that the Part 27 and Part 90 rules require cooperation between licensees in the event of harmful interference and provide authority for the Commission to impose operational restrictions or

[91] Comments of Duke Energy at 19.

[92] Comments of PDV at 33.

[93] Comments of CIC at 8, Comments of NextEra at 20, Joint Comments of API/ENTELEC at 5.

[94] Comments of Alliant Energy at 2.

tighter OOBE limits if necessary to resolve harmful interference."[95] LCRA supports the rules proposed by Sensus that would require the broadband licensee (assuming it is regulated under Part 27) to cooperate in resolving interference caused to a narrowband system and give the Commission authority to impose restrictions on the broadband licensee's operations in the 900 MHz band, if the broadband licensee cannot resolve the interference issue.[96]

LCRA concurs with UPS that the broadband licensee should be responsible for the "protection of any narrowband licensees that would receive harmful interference from the PEBB licensee whether they are in the PEBB's licensed county or nearby, or in the same, adjacent or near-adjacent channels."[97]

IV. Conclusion

WHEREFORE, THE PREMISES CONSIDERED, Lower Colorado River Authority respectfully requests the Commission to take action in this docket consistent with the views expressed herein.

Respectfully submitted,

LOWER COLORADO RIVER AUTHORITY

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[95] Comments of Sensus USA, Inc. ("Sensus") at 5, WT Docket No. 17-200 (filed June 3, 2019).

[96] *Id*. at 5-6.

[97] Comments of UPS at 12.